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## CALCULUS.

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180. Proposed by F. WENNER, Instructor in Physics, Iowa State College.

$$\text{Solve } \frac{d^2y}{dx^2} + A \cos^2 y \frac{dy}{dx} + By = 0.$$


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## MECHANICS.

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169. Proposed by O. W. ANTHONY, Head of Mathematical Department, DeWitt Clinton High School, New York City.

A chain 12 feet long is supported by two pegs in the same horizontal plane 9 feet apart. If it be suddenly liberated from one of the pegs, find the time before the liberated end is directly below the other peg.

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## AVERAGE AND PROBABILITY.

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155. Proposed by E. B. WILSON, Ph. D., Yale University.

The game of craps is played with two dice. If the player throws 7 or 11 on the first throw he wins. If he throws 12, 2, or 3 he loses. If the player throws any other number, that is to say, 4, 5, 6, 8, 9, 10, he is obliged to continue throwing until he throws that number again or until he throws 7. If he succeeds in throwing his first throw before he does 7, he wins—otherwise he loses. Required the odds against him. (Note that he can continue throwing indefinitely without getting either his original throw or the 7).

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## NOTES.

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Professor Maxime Bôcher has been promoted to a full professorship at Harvard University. F.

Dr. Alexander Ziwet has been made a full professor of mathematics at the University of Michigan. F.

Dr. George H. Hallett has been made assistant professor of mathematics at the University of Pennsylvania. F.

Mr. W. H. Bursey and Mr. A. C. Lunn have taken the degree of doctor of philosophy at the University of Chicago.